RESPONSE TO FEDERAL LAND MANAGER AND EPA COMMENTS

On November 25, 2008, MassDEP submitted for comment a preliminary draft of the *Massachusetts Regional Haze State Implementation Plan (SIP)* to members of the National Park Service, the Fish and Wildlife Service, and the Forest Service (collectively referred to as the Federal Land Managers or FLMs) and to the U.S. Environmental Protection Agency Region 1 (EPA). On July 31, 2009, MassDEP submitted a revised BART chapter to the FLMs and to EPA for further review. The substantive comments received and MassDEP's responses are listed below.

Commenters:

1. U.S. Department of Interior National Park Service and U.S. Fish and Wildlife Service, comments dated January 23, 2009, [NPS/FWS 01/09]
2. U.S. Department of Agriculture Forest Service, comments dated January 26, 2009, [FS 01/09]
3. U.S. EPA Region 1, comments dated March 24, 2009 [EPA 03/09]
4. U.S. EPA Region 1, comments dated September 17, 2009 [EPA 09/09]

GENERAL COMMENTS

1. Comment: The Commonwealth of Massachusetts (MA) has submitted a well-written draft Regional Haze SIP. The draft SIP addresses several important issue areas as discussed below. The draft SIP acknowledges the several uncertainties faced by MANE-VU in regards to emission inventories, modeling assumptions and modeling results. [NPS/FWS 01/09, FS 01/09]

Response: MassDEP appreciates the FLM's review and comments.

2. Comment: MA's SIP is similar to other MANE-VU draft SIPs reviewed. It is comparable with New Hampshire's SIP due to the level of detail and articulate discussion of why MA/MANE-VU made the decisions it did. It addresses the Clean Air Interstate Rule (CAIR) in only a minimal way, but it is not a CAIR state and did perform a Best Available Retrofit Technology (BART) analysis on all BART-eligible sources (however, there are concerns with BART determinations). It is clear that MA consulted with the Class I states in the region and supports the Reasonable Progress Goals (RPGs) for each Class I state. However, similar questions arise, is this a committal SIP? Have they dealt with the CAIR vacatur effectively? Are the BART determinations incomplete? [NPS/FWS 01/09]

Response: While many of the emission controls contained in the draft SIP's long-term strategy are in effect, certain reductions are dependent on actions MassDEP is committing to, such as the low sulfur fuel strategy. Since the time the FLM comments were submitted, EPA has proposed its Transport Rule to replace CAIR. MassDEP has updated its draft SIP accordingly, including relying on the Transport Rule's anticipated emissions reductions in Massachusetts as an alternative to BART and as a means to meet MassDEP's commitments regarding its targeted electric generating units (EGUs) (part of the "167 EGU stacks" strategy).

SECTION 1: BACKGROUND AND OVERIVEW OF THE FEDERAL REGIONAL HAZE REGULATION

3. Comment: In the third paragraph of Section 1.1, Massachusetts states, "on the worst 20% of days, visibility impairment in the Northeast and Mid-Atlantic Class 1 areas ranges from about 25 to 30 dv."

This statement is inconsistent with the data presented later in Table 5 in Section 32. The table lists the baseline 20% worst visibility for MANE-VU Class I areas as 21.7 to 29.0 dv. In addition, in the Section 1.1 discussion, it would be helpful to include the visibility range (in kilometers or miles) on the worst 20% days to give the reader a better context. [EPA 03/09]

Response: MassDEP has corrected this Section and added a visibility range.

SECTION 2: REGIONAL PLANNING AND STATE/TRIBE AND FEDERAL LAND MANAGER COORDINATION

4. Comment: Why include Canadian provinces in Table 2 when you do not have any information for them? At a minimum, explain modeling runs grouped Canadian sources as a whole outside the modeling grid. The draft SIP does not discuss the importance (or lack thereof) of international emission sources. [NPS/FWS 01/09]

Response: MassDEP has deleted Canadian provinces from Table 2.

5. Comment: Section 2 provides a good overview of how MANE-VU functioned and sets up a framework for working with FLMs on future reports and reviews. Also includes list of items on which the Commonwealth will consult with FLMs between now and 2013. [NPS/FWS 01/09]

Response: MassDEP appreciates this comment and is committed to continuing to work with FLMs.

SECTION 3: ASSESSMENT OF BASELINE AND NATURAL CONDITIONS

6. Comment: Even though MA is not a Class I state, the draft SIP effectively describes the methodology used to determine baseline and natural conditions (i.e., default vs. revised visibility calculation). Uniform Rate of Progress is not addressed considering it is not a Class I state. [NPS/FWS 01/09]

Response: MassDEP appreciates this comment and notes that the MANE-VU planning process was very effective in involving all of MANE-VU in establishing background and natural conditions and establishing a uniform rate of progress.

SECTION 4: MONITORING STRATEGY

7. Comment: The Commonwealth did a good job at outlining current monitoring in MA and in Class I areas affected by MA. MA is not required to have a monitoring plan, but we may suggest to the state that they include a commitment to continue existing monitoring and a commitment to work with Cape Cod National Seashore/NPS and EPA to keep the monitoring program together. [NPS/FWS 01/09]

Response: MassDEP will continue these monitoring programs and work with the Cape Cod National Seashore/National Park Service and EPA towards this end.

SECTION 6: EMISSIONS INVENTORY

8. Comment: The Commonwealth does an effective job outlining the development and production of emission inventories for all sources. Provides summary information by pollutant for each source for

2002 and 2018 for all of MANE-VU. Also, includes summary information for the Commonwealth alone, by pollutant by source type for 2002 and 2018. Conclusion is that MA will reduce total regional haze pollutants by 31% compared to MANE-VU's overall reduction of 29%. MA acknowledges the challenges that existed in developing the inventories, including how different RPOs developed individual inventories and explains why MANE-VU chose their inventory for modeling runs. [NPS/FWS 01/09]

Response: MassDEP appreciates this comment.

9. Comment: Recommend referencing which appendices individual Pechan Technical documents are included in within text. [NPS/FWS 01/09]

Response: MassDEP has referenced the Pechan technical documents that are included as appendices.

10. Comment: In paragraph 4 of Section 6.1.1, Massachusetts states that it revised its inventory of area source heating oil emissions by adjusting the sulfur percent used to derive the emission factors from 1.0 to 0.3. Massachusetts should explain why this change was made. [EPA 03/09]

Response: MassDEP has added an explanation of this change, which states "the sulfur percent used to derive the emissions factors was adjusted from 1.0 to 0.3 because the Massachusetts draft 2002 SO_2 emissions methodology for commercial and residential distillate fuel oil used the EPA default sulfur content of 1% instead of the correct 0.3% value that was implemented in 2001 according to Massachusetts regulation 310 CMR 7.05(1) and (2)."

11. Comment: Massachusetts should clarify which of the three emission control scenarios for 2018 emissions is being presented in Sections 6.4 and 6.5. [EPA 03/09]

Response: MassDEP has added a footnote explaining the use of the 2002 MANE-VU Regional Baseline Inventory, version 3.

SECTION 7: UNDERSTANDING THE SOURCES OF VISIBILITY-IMPAIRING POLLUTANTS

12. Comment: The draft SIP only includes SHEN and BRIG as the 2 Class I areas the Commonwealth does **not** impact, even though figures (Figure 26) are included for Dolly Sods. Therefore, we recommend including Dolly Sods as a 3rd Class I area that MA does not contribute to (in addition to SHEN and BRIG). A follow-up comment is that the draft SIP needs to be consistent in naming the Class I areas it impacts. For example, on one occasion the draft SIP includes all Class I areas in MANE-VU, and then in this Section 7, BRIG is identified as not being impacted by MA emissions. [NPS/FWS 01/09]

Response: MassDEP has included Dolly Sods in the list of Class I areas not impacted by Massachusetts in Section 7. MassDEP has included Figures 21, 26, and 27 to illustrate that emissions from Massachusetts do not contribute greater than 0.1 ug/m^3 sulfate or 2% of sulfate to Brigantine, Shenandoah, and Dolly Sods Class I areas, respectively.

13. Comment: VOCs – Organic Carbon (OC) is identified as second largest contributor to RH after sulfate. No major commitment made to address OC, other than future regulations dealing with fine

particles and visibility impairment may focus on OC (particularly those focused on summertime ozone problems in urban centers). It is agreed that further work is needed in the Northeast on OC speciation for the development of better emission inventories for visibility planning purposes. [NPS/FWS 01/09]

Response: MassDEP has added the following sentence: "Massachusetts will continue to evaluate methods to reduce the contribution of organic carbon emissions to regional haze; however, significant visibility improvements will not occur until sulfate-dominated visibility impairment has been reduced."

14. Comment: NOx – Recommend including explanation why MA has a slight uptick in NOx emissions between 1996 and 1999. Same comment for figure 32 & 33, why the uptick in PM10 and PM2.5 emissions between 1996 and 1999 for MA. [NPS/FWS 01/09]

Response: MassDEP has added an explanation that for Massachusetts the increase from 1996 to 1999 of NO_x, PM_{10} and $PM_{2.5}$ emissions primarily was due to increases in emissions from off-road and stationary point sources. The subsequent decline in emissions from 1999 to 2002 is mainly attributable to controls in the on-road mobile category, including Enhanced I/M and CA-LEV. There also were significant reductions in the stationary point source category, mainly power plants, that are attributable to NO_x RACT.

15. Comment: Section 7 includes discussion on crustal material and the potential importance to Northeast inventories and that more understanding is needed of its importance. Control measures targeted at crustal material may prove beneficial. [NPS/FWS 01/09]

Response: MassDEP acknowledges that crustal material is an important contributor to the PM inventory and will continue to consider control measures targeted at crustal material through the MANE-VU regional planning process.

16. Comment: Massachusetts should explain the increase in ammonia emissions from 1999 to 2002 shown in Figure 37. [EPA 03/09]

Response: The following paragraph explains the increase in ammonia emissions from 1999 to 2002. "Figure 38 shows that estimated ammonia emissions were fairly stable in the 1996 NEI, 1999 NEI, and 2002 Version 3 MANE-VU inventories for MANE-VU states, with some slight increases observed for most states in MANE-VU. This apparent increase in emissions from 1999 to 2002 is due to a difference in the models used to generate the emissions data. 1999 emissions were generated using an EPA model, whereas the 2002 emissions were generated using the CMU ammonia model described above. The CMU ammonia model incorporates categories such as humans, house pets, wild animals, fertilizers, soils, and miscellaneous animals that are not incorporated into the EPA model."

SECTION 9: REASONABLE PROGRESS GOALS

17. Comment: The draft SIP states MA consulted with NJ even though earlier, the draft SIP states the Contribution Assessment did not indicate an impact at BRIG. See also under Long-term Strategy, again MA does not include BRIG as impacted by MA emissions. [NPS/FWS 01/09]

Response: While New Jersey and Massachusetts both participated in the overall MANE-VU consultation process, MassDEP has removed New Jersey from the list of states Massachusetts specifically consulted with.

SECTION 10: LONG-TERM STRATEGY

18. Comment: Massachusetts commits to adopting the regional measures before 2018 and will include an update on the measures in the 5-year review in 2013. [NPS/FWS 01/09]

MA acknowledges the uncertainties in the BOTW inventory due to lack of enforceability and commits to evaluating whether they are reasonable to adopt by 2018 and will make such determination in the 2013 report. [NPS/FWS 01/09]

In regards to the MANE-VU ASK, the draft SIP states "… this long-term strategy to reduce and prevent regional haze will allow each state up to 10 years to pursue adoption and implementation of reasonable and cost-effective NOx and SO2 control measures as appropriate and necessary." Highly recommend MA includes a statement that the Commonwealth will provide progress reports on each of the Ask items in the 2013 review. [NPS/FWS 01/09]

Response: MassDEP has added the following sentence to address these comments: "Massachusetts will provide an update on the implementation of the strategies listed in the "Ask" in the 2013 mid-term review."

19. Comment: Editorial comment, 3rd paragraph, 3rd sentence: "…may *be* subject to…" [NPS/FWS 01/09]

Response: MassDEP has corrected this sentence.

20. Comment: Regarding satisfying 90% SO2 control on 167 stacks: "Current best estimates indicate that SO2 emissions will be reduced by 73%. Massachusetts will revise these projections before the progress report due in five years, by July 31, 2013. Alternative measures will be pursued if it is infeasible to achieve the 90 percent level of reduction at these stacks. Massachusetts will continue to evaluate alternative measures to determine whether they are reasonable to adopt and implement by 2018, and expects to make that determination in the progress report." – There are 10 stacks in MA that are in the 167 list. Is this statement satisfactory? It clearly states the Commonwealth will not meet 90%, but does commit to reviewing this in 2013. [NPS/FWS 01/09]

The MANE-VU EGU strategy includes 90 percent or greater reduction in SO_2 emissions from 167 stacks shown to impact the MANE-VU Class 1 areas. Massachusetts is home to 10 of these stacks. In discussing this strategy in Section 10.4.6, Massachusetts references implementation of 310 CMR 7.29, which limits SO_2 emissions to 6.0 lb/MWh on a rolling monthly average. This rule, however, is not currently federally enforceable. Massachusetts should submit this rule to EPA as a SIP revision. Also, Massachusetts estimates that SO2 emissions from these 10 stacks will be reduced by 73 percent. What additional measures is Massachusetts considering to meet the SO_2 reduction shortfall? [EPA 03/09]

Response: MassDEP did not originally anticipate achieving the stated MANE-VU goal of 90 percent reduction from each of the 10 stacks located in Massachusetts that are part of the "167 stacks" strategy. However, under EPA's proposed Transport Rule, Massachusetts will achieve the 90 percent reduction, and MassDEP has revised the draft Regional Haze SIP to reflect this.

21. Comment: The November 21, 2008 edition of the draft SIP includes an Executive Summary, which is very effective in summarizing the actions intended to be taken by MA. However, as currently written, the CAIR vacatur is only noted in a footnote with the argument, that because MA is not a Class I state and did not use the CAIR-based modeling to determine RPGs and has performed individual BART determinations, the Commonwealth has taken all actions necessary to make their fair share of emission reductions as outlined in the draft SIP. Because the vacatur of CAIR is an important issue to be dealt with regarding Regional Haze development in the East, we recommend MA include this statement directly in the Executive Summary as well as in Section 10, Long Term Strategy. [NPS/FWS 01/09]

When discussing CAIR in terms of reduction programs used for modeling, please include update of CAIR status in terms of its actual implementation (i.e., none) and how that will affect MA or MANE-VU reporting in 2013. [NPS/FWS 01/09]

Page 102 footnote, need to update with CAIR information [NPS/FWS 01/09]

Footnote 5 needs to be updated in light of the CAIR remand. In addition, EPA recommends that Massachusetts include more discussion on CAIR reductions beyond this short footnote. [EPA 03/09]

Response: CAIR was remanded to EPA in December 2008 and remains in place until a replacement rule is put into effect. In August 2010, EPA proposed its Transport Rule to replace CAIR. MassDEP has updated references to and discussion of CAIR to reflect the proposed Transport Rule.

All MANE-VU Class I states used CAIR as a basis for modeling progress towards the reasonable progress goals in their Regional Haze SIPs. For the short-term, this modeling is still valid. MassDEP believes its Regional Haze SIP includes all measures necessary to obtain its fair share of emission reductions needed to meet reasonable progress goals. These measures will be reviewed at the mid-point review in 2013 in consultation with Class I states, who may at that time reassess their reasonable progress goals. By that time, EPA's Transport Rule should be final and new modeling results should be available. It should then be possible to fine-tune regional haze plans as necessary to take into account the Transport Rule and other measures states have implemented.

22. Comment: Massachusetts discusses the MANE-VU low-sulfur fuel oil strategy. DEP should include more detail on the specific steps Massachusetts plans to take to implement this strategy and make it federally enforceable, especially with regard to the first "outer zone" state milestone of 2014. [EPA 03/09]

Response: MassDEP has added additional detail on the steps it will take to implement the MANE-VU low-sulfur fuel oil strategy. In 2011, MassDEP will propose to amend 310 CMR 7.05: Fuels to incorporate the low-sulfur fuel oil limits. The final regulation will be submitted to EPA as a revision to the Massachusetts SIP, which will make it federally enforceable.

23: Comment: MA commits to investigate measures to mitigate impact from smoke from open burning associated with agriculture and forestry management. The Commonwealth commits to reviewing existing state regulations associated with open burning in context of Regional Haze. Prescribed burning is currently allowed under law with approval by MassDEP. [NPS/FWS 01/09]

Response: MassDEP has reviewed its open burning regulations and believes its rules and practices are sufficient to protect visibility in the Class I areas affected by emissions from Massachusetts sources, including agricultural and forestry smoke.

24. Comment: MDEP includes pending regulations to deal with outdoor wood-fired boilers (see Regulation of Outdoor Hydronic Heaters). We recommend MDEP update this section, since regulations should be on the books at this time (draft SIP states by September 2008), and include the State's intention to submit these regulations as a part of the regional haze SIP. [FS 01/09]

In terms of the MANE-VU Ask, MA does include pending regulations to deal with outdoor wood-fired boilers (see Regulation of Outdoor Hydronic Heaters). We recommend MA update this section, since regulations should be on the books at this time (draft SIP states by September 2008). [NPS/FWS 01/09]

Massachusetts references the proposal of 310 CMR 7.26(50) to control the emissions from outdoor wood-fired boilers. Massachusetts should update this discussion to reflect the adoption of this regulation and the DEP should submit this rule to EPA as a SIP revision. [EPA 03/09]

Response: MassDEP has updated Section 10 to reflect finalization of new regulations on 12/26/2008, 310 CMR 7.26(50) through (54), to control emissions from outdoor hydronic heaters (OHHs, also called outdoor wood-fired boilers or OWBs). MassDEP intends to submit 310 CMR 7.26(50) through (54) to EPA as a SIP revision to make it federally enforceable.

25: Comment: It would help in our evaluation of the SIP if MDEP would explicitly state which "expected" LTS components in Section 10 are currently enforceable and which are being evaluated for the 2013 progress report. [FS 01/09]

Response: Section 10.4 identifies ongoing air pollution controls that currently are in place (MassDEP's outdoor hydronic heaters regulations also is in place, as described in Section 10.8). Section 10.5 identifies additional reasonable strategies (i.e., those embodied in the MANE-VU "Ask") that are not yet enforceable but which Massachusetts has committed to pursue and make enforceable before the 2013 progress report, including BART/Alternative BART, the low-sulfur oil strategy, and the targeted "167" EGU stacks strategy. The MANE-VU "Ask" also identifies continued evaluation of other control measures including energy efficiency, alternative clean fuels, and other measures to reduce SO_2 and NO_x emissions from all coal-burning facilities by 2018 and new source performance standards for wood combustion. MassDEP will continue to evaluate these strategies and provide an update in the 2013 progress report.

26. Comment: The Forest Service routinely requests that SIPs include language linking the Regional Haze Program with the Prevention of Significant Deterioration program. We note that the PSD program can be an effective tool to prevent degradation of "Best Days", and that new sources should be consistent with or accounted for in RH SIP revisions. [FS 01/09]

Recommend MA address the importance of reviewing future projected emission growth, e.g. NSR and PSD permits, in regards to how the emission growth may impact regional haze and RPGs. [NPS/FWS 01/09]

Response: The following text has been added to the Regional Haze SIP to address these comments:

The Prevention of Significant Deterioration (PSD) program applies to all new major stationary sources (or existing major stationary sources making a major modification) located in an area that is in attainment or is unclassified for a pollutant with a NAAQS. A major source is an emissions source that has the potential to emit more than 100 tons per year of a regulated pollutant in a listed category or 250 tons per year in any other category. One of the intentions of the PSD program is to protect air quality in national parks, wilderness areas, and other areas of special natural, scenic, or historic value. The PSD permitting process requires a technical air quality analysis and additional analyses to assess the potential impacts on soils, vegetation and visibility at Class I areas.

MassDEP accepted delegation of the federal PSD program in 1982. In 2003, consistent with its delegation agreement, MassDEP returned the program to EPA and EPA Region I assumed the responsibility for issuing PSD permits for Massachusetts facilities. As part of the federal fiscal year 2011 Performance Partnership Agreement with EPA, MassDEP agreed to reverse its earlier decision and will take delegation of the PSD program, while simultaneously completing the state regulatory adoption of the PSD program for inclusion in the federally enforceable Massachusetts State Implementation Plan.

In addition, MassDEP has retained its state new source review program, which permits new and modified sources of emissions under 310 CMR 7.02 – Plan Approval and Emission Limitations. This regulation requires Best Available Control Technology (BACT) for all pollutant emissions and a determination that the new or modified source will not cause or contribute to a violation of a NAAQS. Depending upon the specific pollutant, the new or modified source also may be subject to non-attainment review under 310 CMR 7.00 Appendix A – Emissions Offsets and Non-Attainment Review, which requires Lowest Achievable Emissions Rate (LAER).

BEST AVAILABLE RETROFIT TECHNOLOGY (BART)

27. Comment: Like our FLM partners, we are concerned about the adequacy of the BART determinations. We do not reproduce their detailed comments below, but support the comments they submitted to you. [FS 01/09]

First, the Massachusetts Department of Environmental Protection's (MDEP) heavy reliance on Regulation 310 CMR 7.29(5)(a) as a de facto standard for BART seems to have resulted in less adherence to the full five-factor BART analysis presented in the EPA BART Guidelines. [NPS/FWS 01/09]

Second, MDEP has not demonstrated how the SO_2 and NO_x emission limits in Regulation 310 CMR 7.29(5)(a) comport with the presumptive SO_2 and NO_x emission limits in the EPA BART Guidelines. For example, Regulation 310 CMR 7.29(5)(a)2.b.i. provides emission limits based on a *energy output basis* of 3.0 lbs./MWh for SO_2, calculated over any consecutive twelve-month period, recalculated monthly, providing for the use of allowances and early reduction credits to meet the emission limit. The SO_2 presumptive requirement in the EPA BART Guidelines for certain electric generation units (EGUs) within 750 MW power plants is either 95% emission control or 0.15 lbs./MMBtu on a *heat input basis*, over a 30-day rolling average without the use of allowances or early reduction credits. The specific thermal efficiencies of the various steam power plants would need to be factored into this determination for each unit in order to make the necessary comparison. A similar situation exists for NO_x emission limits. Certainly, the consecutive twelve-month period, recalculated monthly, providing for the use of allowances and early reduction credits is more forgiving than the 30-day rolling average without the use of allowances or early reduction credits. [NPS/FWS 01/09]

Third, some units have proposed control technologies (e.g., selective catalyst reduction and spray dryer absorber) that are more stringent than the Regulation 310 CMR 7.29(5) control levels, but the permit emission limits are only bounded by the Regulation's stringency. [NPS/FWS 01/09]

Fourth, emission controls for low capacity units were merely assumed to be too expensive to install without the rigor of a full five-factor analysis. [NPS/FWS 01/09]

Fifth, additional information has yet to be provided and evaluated (i.e., Mystic Station Boiler #7 and Wheelabrator – Saugus Incinerator) before the Regional Haze SIP can be considered to be complete. [NPS/FWS 01/09]

Response: MassDEP has revised the Regional Haze SIP (see Section 8) to include an Alternative to BART approach that relies on EPA's proposed Transport Rule and is no longer proposing source-specific BART determinations for its EGUs. The Transport Rule would take effect in the same timeframe as BART requirements and would require greater reductions in SO_2 and NO_x than would be achieved through BART alone (with the exception of Wheelabrator-Saugus incinerator).

NOTE: The FLMs and EPA submitted additional detailed comments on MassDEP's proposed BART determinations (see Appendices D-1 and D-4). MassDEP has not responded to those comments since it is no longer proposing source-specific BART determinations, except for the Wheelabrator-Saugus incinerator (see Comment 31).

28. Comment: MDEP determined that six BART-eligible facilities had a de minimis impact of less than 0.1 deciview on the nearest Class I area, so as to not be subject to BART. The NESCAUM exemption modeling that documents these conclusions should be included in the SIP as an appendix and be referenced in the BART section of the SIP. [NPS/FWS 01/09]

Response: MassDEP added a sentence that references Appendix R that provides details for modeling of Massachusetts BART-eligible facilities and Appendices R-1 and R-2 that contain the modeling results.

29. Comment: General Electric – Lynn Industrial Boiler #3. NO_x emissions from this industrial boiler are currently controlled with LNB and OFA. The analysis that was presented, $2,000 - $4,000 per ton with 80% NO_x reduction for an SCR system, lacks the engineering rigor provided for in the EPA BART Guidelines. If a full five-factor BART determination exists that examines SCR and other combustion controls, please provide it to the reviewers. Otherwise, the conclusions were derived from an inadequate basis and a five-factor BART determination should be developed. [NPS/FWS 01/09]

Response: General Electric – Lynn has applied to MassDEP for a permit cap of less than 250 tpy for NO_x and SO_2 emissions from Unit 3 in order to become exempt from BART requirements; PM10 potential emissions already are less than 250 tpy. MassDEP intends to issue this permit cap to GE – Lynn, at which time it will become federally enforceable. Once this permit is issued, General Electric – Lynn Unit 3 will no longer be BART-eligible. Therefore, no BART determination is being proposed for General Electric – Lynn Unit 3.

30. Comment: Trigen – Kneeland Station Industrial Boiler #3. NO_x emissions from this industrial boiler are currently controlled with combustion modification and fuel reburning. The analysis that was presented lacks the engineering rigor provided for in the EPA BART Guidelines. If a full five-factor

BART determination exists that examines SCR and other combustion controls, please provide it to the reviewers. Otherwise, the conclusions were derived from an inadequate basis and a five-factor BART determination should be developed. [NPS/FWS 01/09]

Response: MANE-VU has identified a set of sources whose potential "degree of visibility improvement" is so small (<0.1 ddv) that no reasonable weighting could justify additional controls under BART. (Note that the cumulative impact of all of these sources is lower than EPA's guidance that states that the threshold for determining whether a source "contributes" to visibility impairment should be ≤0.5 dv.) Trigen – Kneeland has been added to this list, despite its modeled impact of 0.146 ddv using the MM5 modeling platform, due to two significant errors in the 2002 input data used by MANE-VU to screen facilities for their impact on visibility. First, Units 1-4 were included in the modeling when only Unit 3 is BART-eligible. Second, the 2002 modeled NOx emissions from Unit 3 were 396 tons, rather than the actual 96 tons of NOx emissions. MassDEP believes that modeling using the corrected 2002 NOx emissions from Trigen - Kneeland would indicate a total visibility impact of <0.1 ddv. Therefore, MassDEP considers Trigen – Kneeland to be a source with de minimis impact on visibility.

31. Comment: Wheelabrator – Saugus Incinerator. MDEP will propose a NO_x emission limit on 12/31/2008 which will become the BART emission limit for this incinerator. Therefore, any comment at this time would be premature. However, the Regional Haze SIP can only be considered complete when each source that is subject to BART has federally enforceable emission limits. Thus, the finalization process should be accelerated so as to meet the needs of the Regional Haze SIP process. [NPS/FWS 01/09]

Response: Wheelabrator has NO_x control equipment for both units that includes low-NO_x burners and Selective Non-Catalytic Reduction (SNCR). Wheelabrator's permitted NO_x emission limit under 310 CMR 7.08(2)(f)3 is 205 ppm (by volume at 7 percent oxygen dry basis, 24-hr daily arithmetic average). Compliance is determined by continuous emissions monitors (CEMs). MassDEP's regulatory limit is consistent with EPA's Emissions Guidelines (both 1995 and 2006). However, MassDEP believes that the capabilities of current NO_x control technologies can achieve emissions lower than EPA's MACT.

At MassDEP's request, Wheelabrator performed furnace gas temperature profiling and conducted SNCR optimization testing to determine the capability of further reducing NO_x emissions while minimizing ammonia slip. The optimization test results indicate that a reduced NO_x emissions target of 185 ppm (dry, 7% O_2) at current boiler operating loads of approximately 150,000 lbs/hr could be achieved with the existing SNCR system. Based on MassDEP's review of Wheelabrator – Saugus' existing control technologies, MassDEP proposes that the NO_x emissions rate target of 185 ppm for each of Wheelabrator's units represents BART.

MassDEP plans to coordinate Wheelabrator-Saugus permit modifications to address the proposed BART emissions rate with permit modifications that will be required by revisions to 310 CMR 7.08(2) (Municipal Waste Combustors) and 310 CMR 7.19 (NO_x Reasonably Available Control Technology (RACT)) that MassDEP plans to propose in 2011. Since MassDEP plans to revise these regulations in 2011 and may propose a presumptive NO_x RACT emission limit lower than 185 ppm -- which may lead Wheelabrator-Saugus to pursue a source-specific RACT analysis -- MassDEP will require Wheelabrator to modify its emissions control plan once these regulations are finalized, which will make the NO_x limit federally enforceable. This permit modification will be required no later than July 1, 2013.

NOTE: The following comments were submitted by EPA on September 17, 2009 after review of MassDEP's July 31, 2009 revised BART determinations.

32. Comment: Massachusetts indicates that the cumulative impact of all of the sources with a visibility impact below 0.1 dv results in a visibility impact below the EPA recommended impact threshold of 0.5 dv. EPA recommends that Massachusetts clarify that this cumulative modeling includes all sources in the MANE-VU domain with a visibility impact below 0.1 dv and is not limited to only Massachusetts sources. It may also be useful to indicate the number of sources included in the modeling.

Response: MassDEP has made the following clarification: "(Note that the cumulative impact of all of these sources in the entire MANE-VU region is lower than EPA's guidance which states that the threshold for determining whether a source "contributes" to visibility impairment should be ≤0.5 dv.)"

33. Comment: EPA recommends that the last paragraph on page [8] be revised as follows:

"Trigen – Kneeland has been added to this list, despite its modeled impact of 0.146 ddv (0.127 ddv from NO3) using the MM5 modeling platform, due to two significant errors in the 2002 input data used by MANE-VU to screen facilities for their impact on visibility."

Response: MassDEP has made this change.

34. Comment: For Table 5 there is no text relating to superscript 3 in the fifth column heading "Subject to Presumptive BART?[3]". Perhaps it is meant to reference footnote 3 which appears back on page [2]. However, it would be easier to follow if the note appeared on the same page as the table.

Response: MassDEP has deleted the superscript, which was unnecessary.

35. Comment: For Table 14, Massachusetts should clarify the difference between the information presented in the column labeled "2002 PM Emissions (tpy)" and the column labeled "2002 PM Emissions (tpy)*".

Response: MassDEP has amended the Table to only present emissions at the facility-wide level as reported to MassDEP.

36. Comment: Table 14 indicates that several facilities currently operate electrostatic precipitators (ESPs) and Massachusetts indicates that no additional controls are warranted for PM. However, if these current controls are considered BART, then they must be made federally enforceable. Massachusetts should include more information about the current requirements. For example, what are the permit limits? Are these limits federally enforceable? If not, how will they become federally enforceable? How do these limits compare to the MANE-VU recommended limits of 0.02 – 0.04 lb/MMBtu?

Response: MassDEP has added emission limits for PM to the Table. Brayton Point Unit 4, Salem Harbor Unit 4, and Canal Station Units 1 and 2 have PM limits within or below the MANE-VU recommended limits of 0.02 - 0.04 lb/MMBtu. The remaining facilities have limits that are close to the MANE-VU recommended limits and include Brayton Point Units 1-3 (0.08 lb/MMBtu), Mystic Unit 7 (0.05 lb/MMBtu), and TMLP - Cleary Flood Units 8 and 9 (0.12 lb/MMBtu). While these limits are greater than the MANE-VU recommended limits, these facilities have significantly reduced PM emissions since 2002 and CALPUFF modeling of 2002 PM emissions at these facilities suggests an

impact of below 0.1 ddv on the worst day, both for each unit and cumulatively. Therefore, MassDEP has determined that no additional controls are warranted for primary PM_{10} because controls have been added to all but one of the facilities and the additional cost to install newer, slightly more efficient technology is not justified by the potential negligible visibility benefit. The PM limits for these facilities are in permits that are federally enforceable because they were issued pursuant to a federally enforceable regulation, 310 CMR 7.02, and then were incorporated into each facility's operating permit, which is issued under another federally-approved regulation, 310 CMR 7.00 Appendix C.

37. Comment: Massachusetts should revise its discussion regarding the three VOC sources. Currently, the discussion states that reductions expected to occur by January 1, 2010 at Gulf Oil-Chelsea are sufficient to satisfy BART requirements, while "no further controls at Exxon Mobile-Everett and Global Petroleum-Revere will be required to satisfy BART, given the minor impact of VOC point sources on regional haze." It is not clear how Massachusetts arrived at differing conclusions for these similar sources. Furthermore, Massachusetts has not sufficiently explained why these VOC sources merit BART review.

The BART Guidelines (40 CFR Part 51, Appendix Y) state that visibility pollutants include SO_2, NOx and particulate matter, and that states should exercise judgment in deciding whether VOC and ammonia impair visibility in an area. Specifically, Section II.A.3 of the Guidelines states:

". . . You (the state) need not provide a formal showing of an individual decision that a source of VOC or ammonia emissions is not subject to BART review. Because air quality modeling may not be feasible for individual sources of VOC or ammonia, you should also exercise your judgment in assessing the degree of visibility impacts due to emissions of VOC and emissions of ammonia or ammonia compounds. You should fully document the basis for judging that a VOC or ammonia source merits BART review, including your assessment of the source's contribution to visibility impairment."

Finally, if Massachusetts does determine that these VOC sources merit BART review, then the discussion should include an explanation of how any necessary controls are, or will be made, federally enforceable. The current discussion does not indicate how, or if, the 2 mg/l requirement at Gulf Oil-Chelsea is federally enforceable.

Response: Consistent with EPA's BART Guidelines, MassDEP has decided that the three VOC-emitting BART sources in Massachusetts do not warrant a BART review at this time, in part because of the inability to model the contribution of VOCs to visibility impairment. However, MassDEP is continuing to evaluate control technologies for reducing VOC emissions from petroleum storage at facilities statewide.